Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for NIKON D7100. You'll find the answers to all your questions on the NIKON D7100 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual NIKON D7100
User guide NIKON D7100
Operating instructions NIKON D7100
Instructions for use NIKON D7100
Instruction manual NIKON D7100

Nikon

DIGITAL CAMERA

D7100

User's Manual

En

Manual abstract:

@@Memory cards are sold separately (0 347). @@We apologize for any inconvenience this may cause. Digitutor "Digitutor", a series of "watch and learn" manuals in movie form, is available from the following website: http://www. Html A For Your Safety Before using the camera for the first time, read the safety instructions in "For Your Safety" (0 xxi–xxvi). Where to Find It Find what you're looking for from: i The Table of Contents . 0 328 X Introduction s Basic Photography and Playback # P, S, A, and M Modes $ User Settings: U1 and U2 Modes k Release Mode d Image Recording Options N Focus S ISO Sensitivity Z Exposure r White Balance J Image Enhancement l Flash Photography & Remote Control Photography t Other Shooting Options x Live View Photography y Movie Live View % Special Effects 0 1 0 35 0 47 0 55 0 57 0 63 0 71 0 79 0 83 0 89 0 105 0 119 0 127 0 131 0 153 0 161 0 177 0 185 0 201 0 217 0 295 i I More on Playback Q Connections U Menu Guide n Technical Notes Q&A Index Find what you're looking for using this "question and answer" index. Taking Photographs i Shooting Modes and Framing Options Is there a quick and easy way to take snapshots (i mode)? How do I quickly adjust settings for different scenes? Can I use special effects during shooting? Can I adjust shutter speed to freeze or blur motion (mode S)? Can I adjust aperture to blur backgrounds or bring them into focus (mode A)? How do I make long ("time") exposures (mode M)? Can I frame photos in the monitor (C live view photography)? Can I shoot movies (1 movie live view)? 0 35–38 41 177–183 49 50 52 153 161 7, 57 59 127 7, 57 71–74 75 86 113 i Release Modes Can I take photos one at a time or in quick succession? How do I take pictures with the self-timer? How do I take pictures with an optional ML-L3 remote control? Can I reduce shutter noise in quiet surroundings (quiet shutter-release)? I Focus Can I choose how the camera focuses? Can I choose the focus point? I Using the Flash Can I set the flash to fire automatically when needed? How do I keep the flash from firing? how do I avoid "red-eye"? 36, 119–123 i Image Quality and Size How do I take pictures for printing at large sizes? How can I get more pictures on the memory card? 66–68 Viewing Photographs i Playback How do I view photographs on the camera? How do I view more information about a photo? Can I view photos in an automatic slide show? Can I view photos on a TV? Can I protect photos from accidental deletion? How do I make JPEG copies of RAW (NEF) photos? Can I overlay two NEF (RAW) photos to make a single image? Can I create a copy of a photo that looks like a painting? Can I trim movie footage on the camera or save movie stills? 0 273–290 276 282 280–281 286 173 Menus and Settings How do I use the menus? How do I display menus in another language? How do I use the command dials? How do I keep the displays from turning off? How do I focus the viewfinder? Can I display a framing grid in the viewfinder or the monitor? How do I tell if the camera is level? How do I set the camera clock? How do I format memory cards? how do I restore default settings? How do I get help for a menu or message? Can I print the date of recording on my photos? 0 203–207 208–214 209, 214 Maintenance and Optional Accessories What memory cards can I use? What lenses can I use? What optional flash units (Speedlights) can I use? What other accessories are available for my camera? What software is available for my camera? What do I do with the supplied eyepiece cap? How do I clean the camera? Where should I take my camera for servicing and repairs? 0 347 295 303 308–310 60 312 iii Quick Start Guide Follow these steps for a quick start with the D7100. 1 Attach the camera strap. Attach the strap securely to the camera eyelets. Mounting mark (camera) Mounting mark (lens) Keeping marks (indicated by white dot) aligned, position lens on camera, then rotate until lens clicks into place.
8GB AF area brackets 7 Focus and shoot (0 37). in-focus indicator 8 View the photograph (0 39). K button See Also For information on choosing a language and setting the time and date, see page 28. See page 33 for information on adjusting viewfinder focus. Image review On Off (default) After delete Show next (default) Show previous Continue as before Rotate tall On (default) Off Slide show Start Image type Frame interval DPOF print order Select/set Deselect all? C SHOOTING MENU (0 224) Reset shooting menu Storage folder File naming Role played by card in Slot 2 Image quality Yes No Select folder by number Select folder from list File naming Overflow (default) Backup RAW Slot 1 - JPEG Slot 2 NEF (RAW) + JPEG fine NEF (RAW) + JPEG normal NEF (RAW) + JPEG basic NEF (RAW) JPEG fine JPEG normal (default) JPEG basic Large (default) Medium (0 68) Image area JPEG compression NEF (RAW) recording White balance Small DX (24×16) (default) 1.
3× (18×12) Size priority (default) Optimal quality Type NEF (RAW) bit depth Auto (default) Incandescent Fluorescent Direct sunlight Flash Cloudy Shade Choose color temp. Preset manual (0 66) Image size (0 89) Items marked with a icon can be saved to the memory card using the Save/load settings > Save settings option in the camera setup menu (0 268). The saved settings can be copied to other D7100 cameras by inserting the memory card into the camera and selecting Save/load settings > Load settings. Vi Set Picture Control Manage Picture Control Color space Active D-Lighting 2 HDR (high dynamic range) Auto distortion control Long exposure NR High ISO NR ISO sensitivity settings Standard Neutral Vivid Monochrome Portrait Landscape Save/edit Rename 1 Delete 1 Load/save sRGB Adobe RGB Auto Extra high High Normal Low Off HDR mode HDR strength On Off On Off High Normal Low Off ISO sensitivity (default) Interval timer shooting Movie settings (default) Choose start time Now Start time Interval Select no. A CUSTOM SETTING MENU (0 229) Reset custom settings (default) (default) (default) a Autofocus a1 AF-C priority selection Yes No (default) (0 79) Auto ISO sensitivity control (0 82) Remote control mode (ML-L3) Multiple exposure Delayed remote Quick-response remote Remote mirror-up Off (default) Multiple exposure mode Number of shots Auto gain Release Focus a2 AF-S priority Release selection Focus a3 Focus 5 (Long) tracking with 4 lock-on 3 (Normal) 2 1 (Short) Off a4 AF point Auto illumination On Off a5 Focus point Wrap wrap-around No wrap a6 Number of 51 points focus points 11 points a7 Built-in AFOn assist Off illuminator (default) (default) (default) (default) (default) (default) vii b Metering/exposure b1 ISO sensitivity 1/3 step step value 1/2 step b2 EV steps for 1/3 step exposure 1/2 step cntrl b3 Easy exposure On (Auto reset) compensation On Off b4 Centerφ 6 mm weighted φ 8 mm area φ 10 mm φ 13 mm Average b5 Fine-tune Yes optimal No exposure (default) (default) (default) (default) (default) c Timers/AE lock c1 ShutterOn release Off (default) button AE-L c2 Standby 4s timer 6s (default) 10 s 30 s 1 min 5 min 10 min 30 min No limit c3 Self-timer Self-timer delay Number of shots Interval between shots c4 Monitor off Playback delay Menus Information display Image review Live view c5 Remote on 1 min (default) duration 5 min (ML-L3) 10 min 15 min d Shooting/display d1 Beep Volume Pitch d2 Viewfinder On grid display Off (default) d3 ISO display Show ISO sensitivity and Show ISO/Easy ISO adjustment Show frame count (default) d4 Screen tips On (default) Off d5 CL mode 6 fps shooting 5 fps speed 4 fps 3 fps (default) 2 fps 1 fps d6 Max.

1–100 continuous release d7 File number On (default) sequence Off Reset d8 Information Auto (default) display Manual d9 LCD On illumination Off (default) d10 Exposure 3s delay mode 2 s 1s Off (default) d11 Flash warning On (default) Off d12 MB-D15 LR6 (AA alkaline) (default) battery type HR6 (AA Ni-MH) FR6 (AA lithium) d13 Battery order Use MB-D15 batteries first (default) Use camera battery first viii e Bracketing/flash e1 Flash sync 1/320 s (Auto FP) speed 1/250 s (Auto FP) 1/250 s 1/200 s 1/160 s 1/125 s 1/100 s 1/80 s 1/60 s e2 Flash shutter 1/60 s speed 1/30 s 1/15 s 1/8 s 1/4 s 1/2 s 1s 2s 4s 8s 15 s 30 s e3 Flash cntrl for TTL built-in flash Manual Repeating flash Commander mode e3 Optional TTL flash * Manual e4 Exposure Entire frame comp. For Background only flash e5 Modeling On flash Off e6 Auto AE & flash bracketing AE only set Flash only WB bracketing ADL bracketing e7 Bracketing MTR > under > over order Under > MTR > over f Controls f1 OK button (default) f2 f3 Assign Fn button Assign preview button Assign AE-L/ AF-L button Shooting mode Playback mode Live view Press Press + command dials Press Press + command dials f4 (default) f5 f6 f7 f8 (default) f9 Press Press + command dials Customize Reverse rotation command Change main/sub dials Aperture setting Menus and playback Release Yes button to use No (default) dial Slot empty Release locked release lock Enable release (default) Reverse indicators (default) Assign MB-D15 4 button AE/AF lock AE lock only AE lock (Hold) AF lock only AF-ON FV lock Same as Fn button (default) (default) (default) g Movie g1 Assign Fn button (default) (default) (default) g2 Assign preview button * Displayed only when optional SB-400 flash unit is attached. View photo shooting info AE/AF lock AE lock only AE lock (Hold) AF lock only AF-ON None (default) View photo shooting info AE/AF lock AE lock only AE lock (Hold) AF lock only AF-ON None (default) ix g Movie g3 Assign AE-L/ AF-L button g4 Assign shutter button View photo shooting info AE/AF lock (default) AE lock only AE lock (Hold) AF lock only AF-ON None Take photos (default) Record movies Non-CPU lens data B SETUP MENU (0 261) Format memory card Save user settings Reset user settings Monitor brightness Clean image sensor Lock mirror up for cleaning 1 Image Dust Off ref photo Slot 1 Slot 2 Save to U1 Save to U2 Reset U1 Reset U2 –5 – +5 Clean now Clean at startup/shutdown Start Lens number Focal length (mm) Maximum aperture AF fine-tune AF fine-tune (On/Off) Saved value Default List saved values HDMI Output resolution Device control GPS Standby timer Position Use GPS to set camera clock Wireless mobile Enable (default) adapter Disable Network Choose hardware (available with Network settings optional UT-1) Options Eye-Fi upload 2 Slot 1 Slot 2 Firmware version – 1 Not available at battery levels of J or below. 2 Available only with compatible Eye-Fi memory cards. Start Clean sensor and then start Flicker reduction Auto (default) 50 Hz 60 Hz Time zone and Time zone date Date and time Date format Daylight saving time Language See page 340. Auto image On (default) rotation Off Battery info – Image comment Attach comment Input comment Copyright Attach copyright information information Artist Copyright Save/load Save settings settings Load settings Virtual horizon – x N RETOUCH MENU (0 273) D-Lighting Red-eye correction Trim Monochrome – – – Black-and-white Sepia Cyanotype Skylight Warm filter Red intensifier Green intensifier Blue intensifier Cross screen Soft – – – Select image Choose destination Choose size – – Auto Manual – – – – – – Choose start/end point Save selected frame – O MY MENU (0 291) Add items Playback menu Shooting menu Custom setting menu Setup menu Retouch menu – – MY MENU RECENT SETTINGS Filter effects Remove items * Rank items Choose tab * Items can also be deleted by highlighting them in MY MENU and pressing the O (Q) button twice. Color balance Image overlay 1 NEF (RAW) processing Resize Quick retouch Straighten Distortion control Fisheye Color outline Color sketch Perspective cont could result in electric shock. ☐ Do not damage, modify, or forcibly tug or bend the power cable. Do not place it under heavy objects or expose it to heat or flame. Should the insulation be damaged and the wires become exposed, take the power cable to a Nikon-authorized service representative for inspection.

Failure to observe this precaution could result in fire or electric shock. ☐ Do not handle the plug or charger with wet hands. Failure to observe this precaution could result in electric shock. ☐ Do not use with travel converters or adapters designed to convert from one voltage to another or with DC-to-AC inverters. Failure to observe this precaution could damage the product or cause overheating or fire. A Observe proper precautions when handling batteries Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries for use in this product: • Use only batteries approved for use in this equipment. ☐ Do not short or disassemble the battery. ☐ Be sure the product is off before replacing the battery. If you are using an AC adapter, be sure it is unplugged.

☐ Do not attempt to insert the battery upside down or backwards. ☐ Do not expose the battery to flame or to excessive heat. • Do not immerse in or expose to water. ☐ Replace the terminal cover when transporting the battery. Do not transport or store the battery with metal objects such as necklaces or hairpins. ☐ Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains. ☐ When the battery is not in use, attach the terminal cover and store in a cool, dry place. ☐ The battery may be hot immediately after use or when the product has been used on battery power for an extended period. Before removing the battery turn the camera off and allow the battery to cool.

☐ Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation. A Use appropriate cables When connecting cables to the input and output jacks, use only the cables provided or sold by Nikon for the purpose to maintain compliance with product regulations. A CD-ROMs CD-ROMs containing software or manuals should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment. Xxii Notices • No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission. ☐ Nikon reserves the right to change the specifications of the hardware and software described in these manuals at any time and without prior notice. Notices for Customers in Canada CAUTION This Class B digital apparatus complies with Canadian ICES-003.

This symbol indicates that electrical and electronic equipment is to be collected separately. The following apply only to users in European countries: • This product is designated for separate collection at an appropriate collection point. do not dispose of as household waste.

 Separate collection and recycling helps conserve natural resources and prevent negative consequences for human health and the environment that might result from incorrect disposal. For more information, contact the retailer or the local authorities in charge of waste management. This symbol on the battery indicates that the battery is to be collected separately. The following apply only to users in European countries: • All batteries, whether marked with this symbol or not, are designated for separate collection at an appropriate collection point. do not dispose of as household waste. For more information, contact the retailer or the local authorities in charge of waste management. Nikon will not be held liable for any damages resulting from the use of this product. While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately). aTTENTION Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Xxiii Notices for Customers in the U.

Only): The power cable must be rated for the voltage in use, be at least AWG no. 18 gauge, and have SVG insulation or better with a NEMA 6P-15 plug rated for AC 250 V 15 A. Federal Communications Commission (FCC) Radio Frequency Interference Statement This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful CAUTIONS interference in a residential installation. This Modifications equipment generates, uses, and can radiate The FCC requires the user be notified that any radio frequency energy and, if not installed changes or modifications made to this device and used in accordance with the instructions, that are not expressly approved by Nikon may cause harmful interference to radio Corporation may void the user's authority to communications.

However, there is no operate the equipment. Guarantee that interference will not occur in Interface Cables a particular installation. If this equipment Use the interface cables sold or provided by does cause harmful interference to radio or Nikon for your equipment. Using other television reception, which can be interface cables may exceed the limits of determined by turning the equipment off Class B Part 15 of the FCC rules. And on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna.

 Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/television technician for help. Notice for Customers in the State of California WARNING: Handling the cord on this product may expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. Wash hands after handling. : 631-547-4200 xxiv Notice Concerning Prohibition of Copying or Reproduction Note that simply being in possession of material that has been digitally copied or reproduced by means of a scanner, digital camera, or other device may be punishable by law. Items prohibited by law from being copied or reproduced Do not copy or reproduce paper money, coins, securities, government bonds, or local government bonds, even if such copies or reproductions are stamped "Sample. The copying or reproduction of paper money, coins, or securities which are circulated in a foreign country is prohibited. Unless the prior permission of the government has been obtained, the copying or reproduction of unused postage stamps or post cards issued by the government is prohibited. The copying or reproduction of stamps issued by the government and of certified documents stipulated by law is prohibited.

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Care should be taken to avoid injury when physically destroying data storage devices. Com xxv Use Only Nikon Brand Electronic Accessories Nikon cameras are designed to the highest standards and include complex electronic circuitry. Only Nikon brand electronic accessories (including chargers, batteries, AC adapters, and flash accessories) certified by Nikon specifically for use with this Nikon digital camera are engineered and proven to operate within the operational and safety requirements of this electronic circuitry. The use of non-Nikon electronic accessories could damage the camera and may void your Nikon warranty. The use of third-party rechargeable Li-ion batteries not bearing the Nikon holographic seal shown at right could interfere with normal operation of the camera or result in the batteries overheating, igniting, rupturing, or leaking.

For more information about Nikon brand accessories, contact a local authorized Nikon dealer. Before Taking Important Pictures Before taking pictures on important occasions (such as at weddings or before taking the camera on a trip), take a test shot to ensure that the camera is functioning normally.

Nikon will not be held liable for damages or lost profits that may result from product malfunction. Life-Long Learning As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites: • For users in the U. Com/ Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography.

Additional information may be available from the Nikon representative in your area. See the following URL for contact information: http://imaging. nikon. Com/ A A xxvi Introduction X Overview Thank you for your purchase of a Nikon single-lens reflex (SLR) digital camera. To get the most from your camera, please be sure to read all instructions thoroughly and keep them where they will be read by all who use the product. X □□ Symbols and Conventions To make it easier to find the information you need, the following symbols and conventions are used: D A 0 This icon marks cautions; information that should be read before use to prevent damage to the camera. This icon marks notes; information that should be read before using the camera. This icon marks references to other pages in this manual. Menu items, options, and messages displayed in the camera monitor are shown in bold. A A D Camera Settings The explanations in this manual assume that default settings are used.

Help Use the camera's on-board help feature for help on menu items and other topics. See page 19 for details. Use Only Nikon Brand Accessories Only Nikon brand accessories certified by Nikon specifically for use with your Nikon digital camera are engineered and proven to operate within its operational and safety requirements. Nikon recommends that the camera be inspected by the original retailer or a Nikon-authorized service representative once every one to two years, and that it be serviced once every three to five years (note that fees apply to these services). Frequent inspection and servicing are particularly recommended if the camera is used professionally. Any accessories regularly used with the camera, such as lenses or optional flash units, should be included when the camera is inspected or serviced. 1 Getting to Know the Camera Take a few moments to familiarize yourself with camera controls and displays. You may find it helpful to bookmark this section and refer to it as you read through the rest of the manual. 6 Eyelet for camera strap Release mode dial lock release. 164, 169 A The Power Switch Rotate the power switch as shown to turn the camera on.

Rotate the power switch as shown to turn the camera off. 165 LCD Illuminators Rotating the power switch toward D activates the standby timer and control panel backlight (LCD illuminator), allowing the display to be read in the dark. After the power switch is released and returns to the ON position, the illuminators will remain lit for six seconds while the standby timer is active or until the shutter is released or the power switch is rotated toward D again. 24 7 Contact cover for optional MB-D15 battery pack . 26, 309 The Microphone and Speaker Do not place the microphone or speaker in close proximity to magnetic devices.

Failure to observe this precaution could affect the data recorded on the magnetic devices. 33 12 A button Using the AE/AF lock button . 75 17 Memory card slot cover . 128 21 Live view selector Live view photography . 10 Hiding and displaying indicators during live view .

To choose a mode, press the mode dial lock release and rotate the mode dial. X Mode dial lock release Special Effects Modes (0 177) Use special effects during shooting. P, S, A, and M Modes Select these modes for full control over camera settings. □ P—Programmed auto (0 48) • S—Shutter-priority auto (0 49) • A—Aperture-priority auto (0 50) • M—Manual (0 51) Auto Modes Select these modes for simple, point-and-shoot photography. • i Auto (0 36) • j Auto (flash off) (0 36) Scene Modes (0 41) The camera automatically optimizes settings to suit the selected scene. Match your selection to the scene being photographed. u1 and U2 Modes (0 55) Store and recall customized shooting settings. A Non-CPU Lenses Non-CPU (0 295) lenses can be used only in modes A and M. Selecting another mode when a non-CPU lens is attached disables the shutter release. 6 The Release Mode Dial To choose a release mode, press the release mode dial lock release and turn the release mode dial to the desired setting (0 57).

Release mode dial lock release X Release mode dial Mode Description One photograph is taken each time the shutterrelease button is pressed. The camera takes photographs at a slow rate while the shutter-release button is pressed. The camera takes photographs at a fast rate while the shutter-release button is pressed. As for single-frame, except that camera noise is reduced. Take pictures with the self-timer. S CL CH J E MUP Single frame Continuous low speed Continuous high speed Quiet shutter-release Self-timer Mirror up Raise the mirror before taking photographs. 124 27 "K" (appears when memory remains for over 1000 exposures) . 216 Note: Display shown with all indicators lit for illustrative purposes. 64 6 Framing grid (displayed when On is selected for Custom Setting d2) . 79 18 "K" (appears when memory remains for over 1000 exposures) .

125 Note: Display shown with all indicators lit for illustrative purposes. No Battery When the battery is totally exhausted or no battery is inserted, the display in the viewfinder will dim. This is normal and does not indicate a malfunction. The viewfinder display will return to normal when a fully-charged battery is inserted. D D The Control Panel and Viewfinder Displays The brightness of the control panel and viewfinder displays varies with temperature, and the response times of the displays may drop at low temperatures.

This is normal and does not indicate a malfunction. 9 The Information Display Press the R button to display shutter speed, aperture, the number of exposures remaining, AF-area mode, and other shooting information in the monitor. 243 13 "K" (appears when memory remains for over 1000 exposures) . 66 Role played by card in Slot 2. 151 1 2 3 4 Note: Display shown with all indicators lit for illustrative purposes.

83 X Turning the Monitor Off To clear shooting information from the monitor, press the R button or press the shutterrelease button halfway. The monitor will turn off automatically if no operations are performed for about 10 seconds. A A See Also For information on choosing how long the monitor stays on, see Custom Setting c4 (Monitor off delay, 0 238). For information on changing the color of the lettering in the information display, see Custom Setting d8 (Information display, 0 241). 11 □□ Changing Settings in the Information Display To change settings for the items listed below, press the P button.

Highlight items using the multi selector and press J to view options for the highlighted item. 127 Tool Tips A tool tip giving the name of the selected item appears in the information display. Tool tips can be turned off using Custom Setting d4 (Screen tips; 0 239). A 12 The Command Dials The main- and sub-command dials are used alone or in combination with other controls to adjust a variety of settings. M/Y button Flash mode Flash compensation D button Bracketing AF-mode button Autofocus mode AF-area mode X Sub-command dial Mode dial E button Exposure compensation Z/Q button Metering Main command dial L/U button White balance X/T button Image quality/size W/S button ISO sensitivity Auto ISO sensitivity control 13 □□ Scene and Special Effect Modes Choose a scene (h; 0 41).

H mode Main command dial Monitor X Choose a special effect mode (q; 0 177). q mode Main command dial Monitor □□ Image Quality and Size Set image quality (0 66). + X (T) button Main command dial Choose an image size (0 68). + E button Main command dial Control panel X Activate or cancel bracketing/ select number of shots in bracketing sequence (mode P, S, A, or M; 0 133). d button Select bracketing increment (mode P , S , A , or M; 0 134). + Main command dial Control panel + D button Sub-command dial Control panel □□ White Balance Choose a white balance option (mode P, S, A, or M; 0 89). + L (U) button Main command dial Control panel Fine-tune white balance (0 91), set color temperature (0 94), or choose a white balance preset (0 95) in mode P, S, A, or M. Control panel + M (Y) button Sub-command dial Control panel X 17 The P button Use the P button for quick access to a variety of functions during viewfinder and live view photography, movie recording, and playback. X □□ Viewfinder Photography Press P to view links to frequently-used shooting options at the bottom of the information display (0 12). P button □□ Live View Photography/Movie Recording Press P to display a list of the settings available during live view photography or movie recording (0 157, 164).

□□ Playback Pressing P during photo or movie playback displays retouch (0 275) or movie edit (0 173) options. 18 Camera Menus Most shooting, playback, and setup options can be accessed from the camera menus. To view the menus, press the G button. G button Tabs Choose from the following menus: • D: Playback (0 217) • C: Shooting (0 224) • A: Custom Settings (0 229) X • B: Setup (0 261) • N: Retouch (0 273) • O/m: My Menu or Recent settings (defaults to My Menu; 0 291) Slider shows position in current menu. If a d icon is displayed at the bottom left corner of the monitor, help can be displayed by pressing the L (U) button.

A description of the currently selected option or menu will be displayed while the button is pressed. press 1 or 3 to scroll through the display. L (U) button d 19 Using Camera Menus The multi selector and J button are used to navigate the camera menus. Move cursor up Cancel and return to previous menu J button: select highlighted item Select highlighted item or display sub-menu X Move cursor down Follow the steps below to navigate the menus. 1 Display the menus.

Press the G button to display the menus. G button 2 Highlight the icon for the current menu. Press 4 to highlight the icon for the current menu. 4 Position the cursor in the selected menu. Press 2 to position the cursor in the selected menu. To exit without making a selection, press the G button. Note the following: • Menu items that are displayed in gray are not currently available. □ While pressing 2 generally has the same effect as pressing J, there are some cases in which selection can only be made by pressing J. □ To exit the menus and return to shooting mode, press the shutter-release button halfway (0 38). 21 First Steps Charge the Battery The camera is powered by an EN-EL15 rechargeable Li-ion battery (supplied).

To maximize shooting time, charge the battery in the supplied MH-25 battery charger before use. About 2 hours and 35 minutes are required to fully recharge the battery when no charge remains. X 1 Connect the AC power cable. connect the power cable. The AC adapter plug should be in the position shown at right; do not rotate. 2 3 Remove the terminal cover. Remove the terminal cover from the battery. insert the battery. Place the battery in the battery bay as shown in the illustration on the charger. 4 Plug the charger in.

The CHARGE lamp will flash slowly while the battery charges. Battery charging Charging complete D Charging the Battery Charge the battery indoors at ambient temperatures between 5 °C–35 °C (41 °F–95 °F). The battery will not charge if its temperature is below 0 °C (32 °F) or above 60 °C (140 °F). 5 Remove the battery when charging is complete. Charging is complete when the CHARGE lamp stops flashing.

Unplug the charger and remove the battery. 22 A The AC Wall Adapter Depending on the country or region of purchase, an AC wall adapter may also be supplied with the charger. To use the adapter, insert it into the charger AC inlet (q). Slide the AC wall adapter latch in the direction shown (w) and rotate the adapter 90° to fix it in the position shown (e). Reverse these steps to remove the adapter.

AC wall adapter latch X 90° 23 Insert the Battery Before inserting the battery, rotate the power switch to OFF. D Inserting and Removing Batteries Always turn the camera off before inserting or removing batteries. Insert the battery in the orientation shown (q), using the battery to keep the orange battery latch pressed to one side. The latch locks the battery in place when the battery is fully inserted (w). battery latch 3 Close the battery-chamber cover. A Removing the Battery Turn the camera off and open the battery-chamber cover. Press the battery latch in the direction shown by the arrow to release the battery and then remove the battery by hand. 24 The Battery and Charger Read and follow the warnings and cautions on pages xxi–xxii and 318–320 of this manual. Do not use the battery at ambient temperatures below 0 °C/32 °F or above 40 °C/104 °F; failure to observe this precaution could damage the battery or impair its performance. Capacity may be reduced and charging times may increase at battery temperatures from 0 °C/32 °F to 15 °C/59 °F and from 45 °C/113 °F to 60 °C/140 °F.

If the CHARGE lamp flashes quickly (about eight times a second) during charging, confirm that the temperature is in the correct range and then unplug the charger and remove and reinsert the battery. If the problem persists, cease use immediately and take battery and charger to your retailer or a Nikon-authorized service representative. Do not short the charger terminals; failure to observe this precaution could result in overheating and damage to the charger. Do not move the charger or touch the battery during charging.

Failure to observe this precaution could in very rare instances result in the charger showing that charging is complete when the battery is only partially charged. remove and reinsert the battery to begin charging again. Battery capacity may temporarily drop if the battery is charged at low temperatures or used at a temperature below the temperature at which it was charged. If the battery is charged at a temperature below 5 °C (41 °F), the battery life indicator in the Battery info (0 266) display may show a temporary decrease. The battery may be hot immediately after use. Wait for the battery to cool before recharging.

The supplied power cable and AC wall adapter are for use with the MH-25 only. Use the charger with compatible batteries only. unplug when not in use. A marked drop in the time a fully charged battery retains its charge when used at room temperature indicates that it requires replacement. purchase a new EN-EL15 battery.

EN-EL15 Rechargeable Li-ion Batteries The supplied EN-EL15 shares information with compatible devices, enabling the camera to show battery charge state in six levels (0 35). The Battery info option in the setup menu details battery charge, battery life, and the number of pictures taken since the battery was last charged (0 266). D X A 25 Attach a Lens The lens generally used in this manual for illustrative purposes is an AF-S DX NIKKOR 18-105mm f/3. Focal length scale Lens hood Lens cap CPU contacts (0 296) Rear lens cap A-M mode switch (0 27, 78) Vibration reduction ON/OFF switch Zoom ring Focus ring (0 78, 159) Lens mounting mark Focal length mark X Care should be taken to prevent dust from entering the camera when the lens is removed. 1 2 Turn the camera off.

Remove the rear lens cap and the camera body cap. 26 3 Attach the lens. Mounting mark (camera) Mounting mark (lens) Keeping marks (indicated by white dot) aligned, position lens on camera, then rotate until lens clicks into place. X If the lens is equipped with an A-M or M/A-M mode switch, select A (autofocus) or M/A (autofocus with manual override). A Detaching the Lens Be sure the camera is off when removing or exchanging lenses. To remove the lens, press and hold the lens release button (q) while turning the lens clockwise (w). After removing the lens, replace the lens caps and camera body cap. CPU Lenses with Aperture Rings In the case of CPU lenses equipped with an aperture ring (0 296), lock aperture at the minimum setting (highest f-number). D 27 Basic Setup A language-selection dialog will be displayed the first time the camera is turned on. Choose a language and set the time and date.

Photographs can not be taken until you have set the time and date. 2 Choose a language and set the camera clock. Use the multi selector and J button to select a language and set the camera clock. Move cursor up J button: select highlighted item Select highlighted item or display sub-menu Move cursor down e q w Select language r t Select time zone Select date format Note: The language and date/time can be changed at any time using the Language and Time zone and date options in the setup menu (0 265). Select daylight saving time option Set time and date (note that the camera uses a 24-hour clock) 28 The Clock Battery The camera clock is powered by an independent, rechargeable power source, which is charged as necessary when the main battery is installed or the camera is powered by an optional EP-5B power connector and EH-5b AC adapter (0 308). Two days of charging will power the clock for about three months. If the camera displays a warning at startup stating that the clock is not set and a B icon flashes in the information display, the clock battery is exhausted and the clock has been reset. Set the clock to the correct time and date. The Camera Clock The camera clock is less accurate than most watches and household clocks. Check the clock regularly against more accurate time pieces and reset as necessary.

The camera clock can also be synchronized with GPS devices (0 152). A A X 29 Insert a Memory Card The camera stores pictures on Secure Digital (SD) memory cards (available separately; 0 347). To install a memory card, turn the camera off and, holding the card in the orientation shown below, slide it in until it clicks into place. The memory card access lamp will light for a few seconds. Note that the camera has two memory card slots (Slot 1 and Slot 2); if you will be using only one memory card, insert it in Slot 1.

X Front Slot 1 Slot 2 Format memory cards before first use or after they have been used in other devices (0 32). Inserting memory cards upside down or backwards could damage the camera or the card. Check to be sure the card is in the correct orientation. The card slot cover will not close if the card is not correctly inserted. A Removing Memory Cards After confirming that the memory card access lamp is off, turn the camera off, open the memory card slot cover, and press the card in to eject it (q).

The card can then be removed by hand (w). 8GB A No Memory Card If the camera is turned off with a charged EN-EL15 battery and no memory card inserted, S will be displayed in the control panel and viewfinder. 30 8GB Memory Cards • Memory cards may be hot after use. Observe due caution when removing memory cards from the camera. ☐ Turn the power off before inserting or removing memory cards. Do not remove memory cards from the camera, turn the camera off, or remove or disconnect the power source during formatting or while data are being recorded, deleted, or copied to a computer. Failure to observe these precautions could result in loss of data or in damage to the camera or card. ☐ Do not touch the card terminals with your fingers or metal objects. ☐ Do not bend, drop, or subject to strong physical shocks. ☐ Do not apply force to the card casing.

Failure to observe this precaution could damage the card. ☐ Do not expose to water, heat, high levels of humidity, or direct sunlight. ☐ Do not format memory cards in a computer. Using Two Memory Cards Slot 1 is for the main card; the card in slot 2 plays a backup or secondary role. If the default setting of Overflow is selected for Role played by card in Slot 2 (0 69) when two memory cards are inserted, the card in slot 2 will only be used when the card in slot 1 is full. D X A Slot 1 Slot 2 The control panel shows the slot or slots that currently hold a memory card (the example at right shows the icons displayed when a card is inserted in each slot). If the memory card is full or locked or an error has occurred, the icon for the affected card will flash (0 334). Control panel Information display A The Write Protect Switch SD memory cards are equipped with a write protect switch to prevent accidental loss of data. When this switch is in the "lock" position, the memory card can not be formatted and photos can not be deleted or recorded (a warning will be displayed in the monitor if you attempt to release the shutter). To unlock the memory card, slide the switch to the "write" position.

8GB Write-protect switch 31 Format the Memory Card Memory cards must be formatted before first use or after being used or formatted in other devices. Formatting Memory Cards Formatting memory cards permanently deletes any data they may contain. Be sure to copy any photographs and other data you wish to keep to a computer before proceeding (0 203). Hold the O (Q) and Z (Q) buttons down simultaneously until a flashing C (format) appears in the shutter-speed displays in the control panel and viewfinder. If two memory cards are inserted, the card in Slot 1 (0 31) will be selected; you can choose the card in Slot 2 by rotating the main command dial.

To exit without formatting the memory card, wait until C stops flashing (about six seconds) or press any button other than the O (Q) and Z (Q) buttons. o (Q) button Z (Q) button 3 Press the O (Q) and Z (Q) buttons again. Press the O (Q) and Z (Q) buttons together a second time while C is flashing to format the memory card. Do not remove the memory card or remove or disconnect the power source during formatting. When formatting is complete, the control panel and viewfinder will show the number of photographs that can be recorded at current settings.

A See Also See page 262 for information on formatting memory cards using the Format memory card option in the setup menu. 32 Adjust Viewfinder Focus The camera is equipped with diopter adjustment to accommodate individual differences in vision. Check that the display in the viewfinder is in focus before framing pictures in the viewfinder. 1 2 Turn the camera on. Remove the lens cap and turn the camera on. x Focus the viewfinder. Rotate the diopter adjustment control until the AF area brackets are in sharp focus. When operating the diopter adjustment control with your eye to the viewfinder, be careful not to put your fingers or fingernails in your eye. AF area brackets Adjusting Viewfinder Focus If you are unable to focus the viewfinder as described above, select single-servo autofocus (AF-S; 0 71), single-point AF (0 73), and the center focus point (0 75), and then frame a high-contrast subject in the center focus point and press the shutter-release button halfway to focus the camera. With the camera in focus, use the diopter adjustment control to bring the subject into clear focus in the viewfinder.

If necessary, viewfinder focus can be further adjusted using optional corrective lenses (0 308). a 33 X 34 Basic s Photography and Playback Battery Level and Card Capacity 1 Turn the camera on. Remove the lens cap and turn the camera on. The control panel will turn on and the display in the viewfinder will light. Before shooting, check the battery level and number of exposures remaining. s 2 Check the battery level. Check the battery level in the control panel or viewfinder. The control panel and viewfinder show the number of photographs that can be taken at current settings (values over 1000 are rounded down to the nearest hundred; e. g. , values between 1000 and 1099 are shown as 1.

0 K). If two memory cards are inserted, the displays show the space available on the card in Slot 1 (0 31). When the number of exposures remaining reaches A, the number will flash, n or j will flash in the shutter-speed displays, and the icon for the affected card will flash. Insert another memory card (0 30) or delete some photos (0 40, 197). A Image Sensor Cleaning The camera vibrates the image sensor to remove dust when the camera is turned on or off (0 313). 35 "Point-and-Shoot" Photography (i and j Modes) This section describes how to take photographs in i and j modes, an automatic "point-and-shoot" mode in which the majority of settings are controlled by the camera in response to shooting conditions. s 1 Select i or j Mode. To shoot where use of a flash is prohibited, photograph infants, or capture natural lighting under low light, select auto (flash off) mode by rotating the mode dial to j. Otherwise, rotate the dial to i (auto). mode dial 2 Ready the camera.

When framing photographs in the viewfinder, hold the handgrip in your right hand and cradle the camera body or lens with your left. Keep your elbows propped lightly against your torso for support and place one foot half a pace ahead of the other to keep your upper body stable. When framing photographs in portrait (tall) orientation, hold the camera as shown in the bottom of the three illustrations at right. In j mode, shutter speeds slow when lighting is poor; use of a tripod is recommended. A Using a Zoom Lens Use the zoom ring to zoom in on the subject so that it fills a larger area of the frame, or zoom out to increase the area visible in the final photograph (select longer focal lengths on the lens focal length scale to zoom in, shorter focal lengths to zoom out). zoom in Zoom ring Zoom out 36 3 Frame the photograph. Frame a photograph in the viewfinder with the main subject in the AF area brackets. AF area brackets 4 Press the shutter-release button halfway. If the subject is poorly lit, the flash may pop up and the AF-assist illuminator may light. S 5 Check the indicators in the viewfinder.

When the focus operation is complete, the infocus indicator (I) will appear in the viewfinder. Focus point In-focus indicator Buffer capacity While the shutter-release button is pressed halfway, the number of exposures that can be stored in the memory buffer ("t"; 0 58) will be displayed in the viewfinder. 6 Shoot. Smoothly press the shutter-release button the rest of the way down to release the shutter and record the photograph. The memory card access lamp next to the memory card slot cover will light while the photograph is being recorded to the memory card. Do not eject the memory card or remove or disconnect the power source until the lamp has gone out and recording is complete. memory card access lamp 37 The Shutter-Release Button The camera has a two-stage shutter-release button. The camera focuses when the shutterrelease button is pressed halfway. To take the photograph, press the shutter-release button the rest of the way down. A Focus: press halfway Shoot: press all the way down s The Standby Timer The viewfinder and the control panel shutter speed and aperture displays will turn off if no operations are performed for about 6 seconds, reducing the drain on the battery.

Press the shutter-release button halfway to reactivate the display. The length of time before the standby timer expires automatically can be selected using Custom Setting c2 (Standby timer, 0 237). A Exposure meters on Exposure meters off Exposure meters on A Camera Off Display If the camera is turned off with a battery and memory card inserted, the memory card icon and number of exposures remaining will be displayed (some memory cards may in rare cases only display this information when the camera is on). Control panel A The Built-in Flash If additional lighting is required for correct exposure in i mode, the built-in flash will pop up automatically when the shutter-release button is pressed halfway.

If the flash is raised, photographs can only be taken when the flash-ready indicator (M) is displayed.

If the flashready indicator is not displayed, the flash is charging; remove your finger briefly from the shutter-release button and try again. To save power when the flash is not in use, press it gently downward until the latch clicks into place. The memory card containing the picture currently displayed is shown by an icon. To view additional information on the current photograph, press 1 and 3 (0 187). JPG 15 / 10/ 2012 10: 02: 28 N OR AL ORMAL 6000x4000 To end playback and return to shooting mode, press the shutter-release button halfway.

A A Image Review When On is selected for Image review in the playback menu (0 222), photographs are automatically displayed in the monitor for a few seconds after shooting. See Also See page 186 for information on choosing a memory card slot. 39 Deleting Unwanted Photographs To delete the photograph currently displayed in the monitor, press the O (Q) button. Note that photographs can not be recovered once deleted. 1 s Display the photograph. Display the photograph you wish to delete as described on the preceding page. The location of the current image is shown by an icon at the bottom left corner of the display. A confirmation dialog will be displayed; press the O (Q) button again to delete the image and return to playback. To exit without deleting the picture, press K. O (Q) button Delete To delete selected images (0 198), all images taken on a selected date (0 199), or all images in a chosen location on a selected memory card (0 198), use the Delete option in the playback menu.

a 40 Creative Photography (Scene Modes) The camera offers a choice of "scene" modes. Choosing a scene mode automatically optimizes settings to suit the selected scene, making creative photography as simple as selecting a mode, framing a picture, and shooting as described on pages 36–38. ⬜⬜ h Mode To view the currently selected scene, rotate the mode dial to h and press the R button. To choose another scene, rotate the main command dial. Mode dial s Main command dial Monitor k Portrait l Landscape Use for portraits with soft, naturallooking skin tones. If the subject is far from the background or a telephoto lens is used, background details will be softened to lend the composition a sense of depth. use for vivid landscape shots in daylight. The built-in flash and AF-assist illuminator turn off; use of a tripod is recommended to prevent blur when lighting is poor. 41 p Child m Sports s Use for snapshots of children. Clothing and background details are vividly rendered, while skin tones remain soft and natural.

Fast shutter speeds freeze motion for dynamic sports shots in which the main subject stands out clearly. The built-in flash and AF-assist illuminator turn off. To take a sequence of shots, select continuous release mode (0 7, 57). N Close Up o Night Portrait Use for close-up shots of flowers, insects, and other small objects (a macro lens can be used to focus at very close ranges). use of a tripod is recommended to prevent blur.

Use for a natural balance between the main subject and the background in portraits taken under low light. Use of a tripod is recommended to prevent blur when lighting is poor. 42 r Night Landscape s Party/Indoor s Reduce noise and unnatural colors when photographing night landscapes, including street lighting and neon signs. The built-in flash and AF-assist illuminator turn off; use of a tripod is recommended to prevent blur. capture the effects of indoor background lighting.

Use for parties and other indoor scenes. T Beach/Snow u Sunset Capture the brightness of sunlight expanses of water, snow, or sand. The built-in flash and AF-assist illuminator turn off. Preserves the deep hues seen in sunsets and sunrises. The built-in flash and AFassist illuminator turn off; use of a tripod is recommended to prevent blur when lighting is poor. 43 v Dusk/Dawn w Pet Portrait s Preserves the colors seen in the weak natural light before dawn or after sunset. The built-in flash and AF-assist illuminator turn off; use of a tripod is recommended to prevent blur when lighting is poor. use for portraits of active pets. The AFassist illuminator turns off. x Candlelight y Blossom For photographs taken by candlelight.

The built-in flash turns off; use of a tripod is recommended to prevent blur when lighting is poor. Use for fields of flowers, orchards in bloom, and other landscapes featuring expanses of blossoms. The built-in flash turns off; use of a tripod is recommended to prevent blur when lighting is poor. 44 z Autumn Colors 0 Food s Captures the brilliant reds and yellows in autumn leaves. The built-in flash turns off; use of a tripod is recommended to prevent blur when lighting is poor. use for vivid photographs of food. Use of a tripod is recommended to prevent blur; the flash can also be used (0 119). 45 s 46 P, # S, A, and M Modes P, S, A, and M modes offer different degrees of control over shutter speed and aperture. Mode Description Programmed auto (0 48): Camera sets shutter speed and aperture for optimal exposure. Recommended for snapshots and in other situations in which there is little time to adjust camera settings. Use to blur background or bring both foreground and background into focus. Manual (0 51): User controls both shutter speed and aperture. Set shutter speed to Bulb (A) or Time (%) for long time-exposures. P S A M # A Lens Types When using a CPU lens equipped with an aperture ring (0 296), lock the aperture ring at the minimum aperture (highest f-number). Type G lenses are not equipped with an aperture ring.

Non-CPU lenses can only be used in modes A (aperture-priority auto) and M (manual), when aperture can only be adjusted using the lens aperture ring. Selecting any other mode disables the shutter release. non-CPU Lenses (0 295) Use the lens aperture ring to adjust aperture. If the maximum aperture of the lens has been specified using the Non-CPU lens data item in setup menu (0 149) when a non-CPU lens is attached, the current f-number will be displayed in the viewfinder and control panel, rounded to the nearest full stop. Otherwise the aperture displays will show only the number of stops (F, with maximum aperture displayed as FA) and the f-number must be read from the lens aperture ring.

A 47 P: Programmed Auto In this mode, the camera automatically adjusts shutter speed and aperture according to a built-in program to ensure optimal exposure in most situations. This mode is recommended for snapshots and other situations in which you want to leave the camera in charge of shutter speed and aperture. # Flexible Program In mode P, different combinations of shutter speed and aperture can be selected by rotating the main command dial while the exposure meters are on ("flexible program"). Rotate the dial to the right for large apertures (low f-numbers) that blur background details or fast shutter speeds that "freeze" motion.

Main command dial Rotate the dial to the left for small apertures (high f-numbers) that increase depth of field or slow shutter speeds that blur motion. all combinations produce the same exposure. While flexible program is in effect, a U indicator appears in the control panel. To restore default shutter speed and aperture settings, rotate the main command dial until the indicator is no longer displayed, choose another mode, or turn the camera off. A A A 48 The Shutter Speed and Aperture Displays The shutter speed and aperture displays can be activated by pressing the shutter-release button halfway to start the standby timer (0 38). See Also See page 327 for information on the built-in exposure program.

S: Shutter-Priority Auto In shutter-priority auto, you choose the shutter speed while the camera automatically selects the aperture that will produce the optimal exposure. Use slow shutter speeds to suggest motion by blurring moving subjects, fast shutter speeds to "freeze" motion. Fast shutter speed (1/1600 s) Slow shutter speed (1/6 s) To choose a shutter speed, rotate the main command dial while the exposure meters are on. Shutter speed can be set to "v" or to values between 30 s and 1/8000 s. Main command dial # A See Also See page 333 for information on what to do if flashing Bulb (A) or Time (%) indicators appear in the shutter-speed displays. 49 A: Aperture-Priority Auto In aperture-priority auto, you choose the aperture while the camera automatically selects the shutter speed that will produce the optimal exposure. Large apertures (low f-numbers) increase flash range (0 123) and reduce depth of field, blurring objects behind and in front of the main subject. Small apertures (high f-numbers) increase depth of field, bringing out details in the background and foreground. Short field depths are generally used in portraits to blur background details, long field depths in landscape photographs to bring the foreground and background into focus. # Large aperture (f/5.

6) Small aperture (f/22) To choose an aperture between the minimum and maximum values for the lens, rotate the subcommand dial while the exposure meters are on. Sub-command dial A Depth-of-Field Preview To preview the effects of aperture, press and hold the depth-of-field preview button. The lens will be stopped down to the current aperture value, allowing depth of field to be previewed in the viewfinder. Depth-of-field preview button A Custom Setting e5—Modeling Flash This setting controls whether the built-in flash and optional flash units such as the SB-910, SB-900, SB-800, SB-700, and SB-600 (0 304) will emit a modeling flash when the depth-offield preview button is pressed. See page 251 for more information.

50 M: Manual In manual mode, you control both shutter speed and aperture. While the exposure meters are on, rotate the main command dial to choose a shutter speed, and the sub-command dial to set aperture. Shutter speed can be set to "v" or to values between 30 s and 1/8000 s, or the shutter can be held open indefinitely for a long time-exposure (Bulb/A or Time/%, 0 52). Aperture can be set to values between the minimum and maximum values for the lens. use the exposure indicators to check exposure.

Shutter speed Aperture # Main command dial Sub-command dial A A AF Micro NIKKOR Lenses Provided that an external exposure meter is used, the exposure ratio need only be taken into account when the lens aperture ring is used to set aperture. The Exposure Indicator If a shutter speed other than Bulb (A) or Time (%) is selected, the exposure indicator in the viewfinder shows whether the photograph would be under- or over-exposed at current settings. Depending on the option chosen for Custom Setting b2 (EV steps for exposure cntrl, 0 234), the amount of under- or over-exposure is shown in increments of 1/3 EV or 1/2 EV (the illustrations below show the display in the viewfinder when 1/3 step is selected for Custom Setting b2). If the limits of the exposure metering or live view exposure control system are exceeded, the indicator will flash. Optimal exposure Underexposed by 1/3 EV Overexposed by over 2 EV A See Also For information reversing the exposure indicators so that negative values are displayed on the right and positive values on the left, see Custom Setting f8 (Reverse indicators, 0 258). 51 □□ Long Time-Exposures (M Mode Only) Select the following shutter speeds for long timeexposures of moving lights, the stars, night scenery, or fireworks. □ Time (%): Start the exposure by using the shutterrelease button on the camera or on an optional remote control, remote cord, or wireless remote controller. The shutter remains open for thirty minutes or until the button is pressed a second time. length of exposure: 35 s Aperture: f/25 # 1 Ready the camera. Mount the camera on a tripod or place it on a stable, level surface.

To prevent light entering via the viewfinder interfering with exposure, remove the rubber eyecup and cover the viewfinder with the supplied DK-5 eyepiece cap (0 60). To prevent loss of power before the exposure is complete, use a fully charged EN-EL15 battery or an optional EH-5b AC adapter and EP-5B power connector. Note that noise (bright spots, randomly-spaced bright pixels, or fog) may be present in long exposures; before shooting, choose On for Long exposure NR in the shooting menu (0 228). If you will be using an ML-L3 remote control, select a remote control mode (Delayed remote, Quick-response remote, or Remote mirror-up) using the Remote control mode (ML-L3) option in the shooting menu (0 127). While the exposure meters are on, rotate the main command dial to choose a shutter speed of Bulb (A) or Time (%). Main command dial Bulb Time # 4 Open the shutter. Bulb: After focusing, press the shutter-release button on the camera or optional WR-1, WR-T10, or MC-DC2 all the way down. Keep the shutter-release button pressed until the exposure is complete. Time: Press the shutter-release button on the camera or optional remote control, remote cord, or wireless remote controller all the way down. If the exposure is started by pressing the shutter-release button on the optional ML-L3 remote control, pictures are taken in "Time" (%) mode even when "Bulb" (A) is selected for shutter speed.

5 Close the shutter. Bulb: Take your finger off the shutter-release button. time: Repeat the operation performed in Step 4. Shooting ends automatically after thirty minutes. 53 # 54 User $ Settings: U1 and U2 Modes Assign frequently-used settings to the U1 and U2 positions on the mode dial.

saving User Settings 1 Select a mode. Rotate the mode dial to the desired mode. mode dial $ 2 Adjust settings. Make the desired adjustments to flexible program (mode P), shutter speed (modes S and M), aperture (modes A and M), exposure and flash compensation, flash mode, focus point, metering, autofocus and AF-area modes, bracketing, and settings in the shooting (0 224) and Custom Settings (0 229) menus (note that the camera will not store the options selected for Storage folder, File naming, Image area, Manage Picture Control, Remote control mode (ML-L3), Multiple exposure, or Interval timer shooting).